Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

**Take Home Test 6 – Congruent Triangles and Triangles   
Geometry**

***Directions:*** *Answer the following questions to the best of your ability. Show all your work on THIS quiz. YOU MUST BOX YOUR FINAL ANSWER TO RECEIVE CREDIT!*

***\*\*\*You must work on this test on your own. If it looks like you worked with someone else you will get a zero and 4 Demerits. You may use your parents, your notes, and the internet for help.***

***I agree to the above statement\*\*\****

***Signature: X\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

1) Find the value of *x* in the right triangle below. *(1 point for set up, 1 point for answer)*

*x*

6

10

\_\_\_/2

2) Ms. Robertson lives 50 miles away from the Oakland Mall. She is traveling 80 miles from the mall to visit her son, Bobby. How much shorter is it for Ms. Robertson to cut diagonally from Bobby’s home to her own rather than traveling back to the mall and then home?

*(1 point for picture, 1 point for each distance – 2 total, 1 point for final answer)*

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3) Andersonville is located at (10, -2), and Benson is located at (-6, -4). What is the distance in miles between the two cities?

*(1 point for setup, 1 point for answer)*

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4) You are using a 20-foot ladder to re-paint a second story window. The window you need to reach is 10 feet above the ground on a wall that is perpendicular to the ground. The first time you lean your ladder to the side of the building, it only reaches 8 feet off of the ground. Approximately how many feet closer to the building do you need to move your ladder in order to reach the window (round to the nearest tenth)?

*(1 point for picture, 1 point for original base, 1 point for answer)*

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5) Draw an example of each of the following triangles with appropriate notation (markings).

a) Obtuse Scalene *(1 point for obtuse, 1 point for scalene)*

b) Acute Isosceles *(1 point for acute, 1 point for isosceles)*

c) Equilateral *(1 point for equilateral)*

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6) Find the measurement of the exterior angle. *(1 point for setup, 1 point for value of x, 1 point for exterior angle)*

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| **1.**and | **1.** Given |
| **2.** | **2.** Given |
| **3a.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **3b.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **4.** Δ*RST* ≅ Δ*PRQ* | **4.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |



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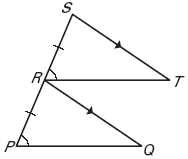
7) **Directions:** Use the proof below to answer the questions that follow.

*(1 point for each blank)*

**GIVEN: ,**

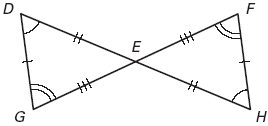
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**PROVE:** Δ*RST* ≅ Δ*PRQ*



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8) Prove: *(up to 5 points depending on flow and logic)*



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9)

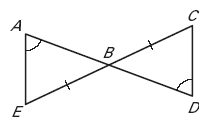
**GIVEN**: ≅ , ∠*A* ≅ ∠*D*

*BC*

*BE*

**PROVE**: Δ*ABE* ≅ Δ*DBC*

*(up to 5 points depending on flow and logic)*

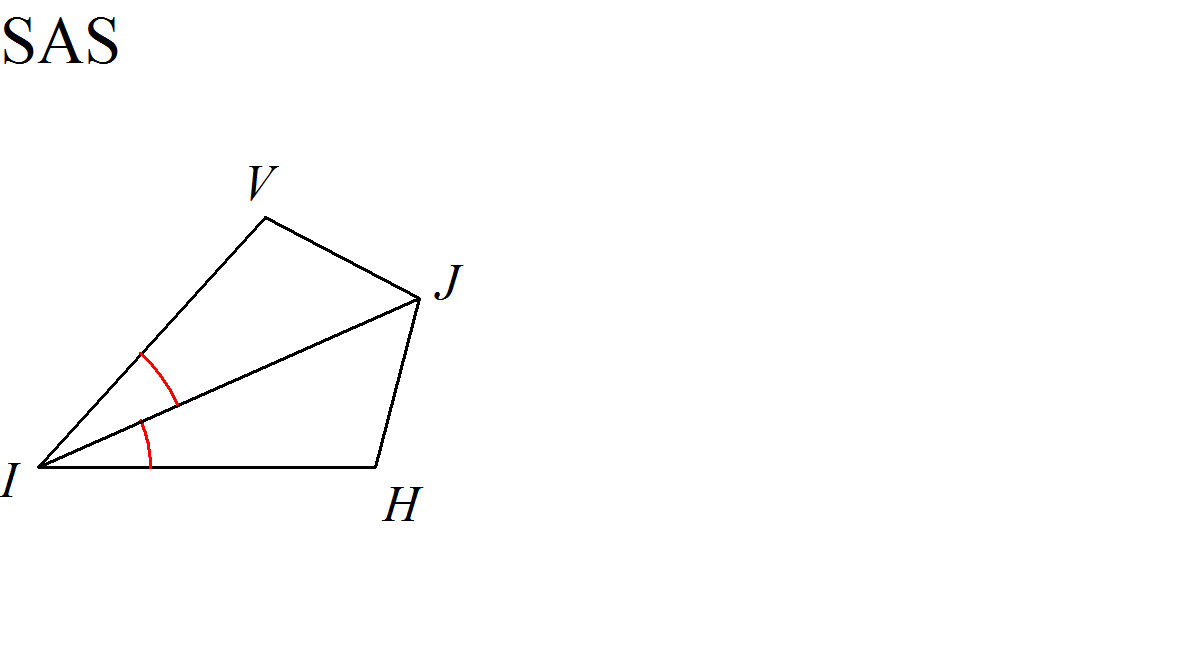


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10)  **Given **

**Prove** ∆*LMN* ≅∆*NTL*

*(up to 5 points depending on flow and logic)*



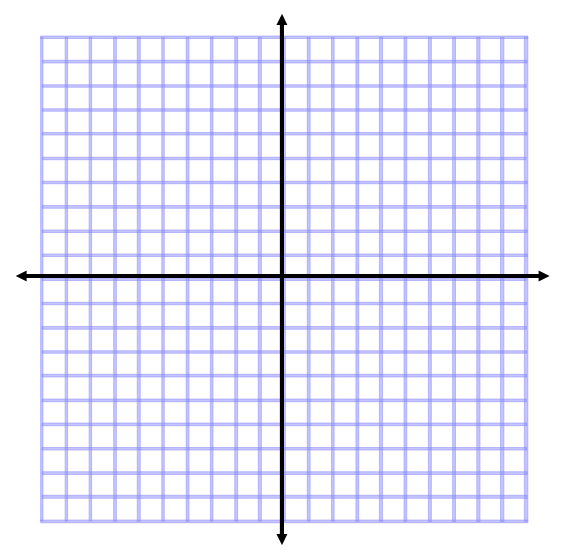
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11) List all triangle congruency postulates and a diagram of each.

*(0.5 pts for each postulate – 3 total, 0.5 pts for each diagram – 3 total)*

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12) In at least 5 sentences explain how to derive the distance formula from Pythagorean’s Theorem. You must explain by using a graph to support your explanation. *(2 pts for diagram, 2 points for calculations, 2 pts for explanation )*

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13) **EXTRA CREDIT:** Create your own figure with two triangles. Write a proof that proves the two triangles are congruent. You will receive 1 point of E.C. for each correct statement/reason use to complete the proof. You will only get 1 point total for “given” information. *(up to 5 points depending on flow and logic)*

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